

The opinion in support of the decision being entered today  
is *not* binding precedent of the Board

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* TIMOTHY M. SCHMIDL, ANAND G. DABAK,  
MOHAMMED NAFIE, and ALAN GATHERER

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Appeal 2007-1481  
Application 09/915,091<sup>1</sup>  
Technology Center 2600

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Decided: August 6, 2007

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*Before:* JOSEPH L. DIXON, HOWARD B. BLANKENSHIP, and MARC  
S. HOFF, *Administrative Patent Judges.*

HOFF, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from a final rejection of  
claims 1-3 and 5-32<sup>2</sup>. We have jurisdiction under 35 U.S.C. § 6(b).

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<sup>1</sup> Application filed July 25, 2001. The application claims priority under 35  
U.S.C. § 119(e) from Provisional Application No. 60/231,652, filed  
September 11, 2000. The real party in interest is Texas Instruments, Inc.

<sup>2</sup> Claim 4 has been canceled.

We affirm.

Appellants' invention relates to identifying sufficient bandwidth which is free of interference for use in wireless communications. Appellants passively monitor a plurality of frequency bands, and select a wide frequency band made up of a selected plurality of frequency bands judged to be free of interference.

Claims 1 and 13 are exemplary:

1. A method of selecting a plurality of frequency bands for use in a desired wireless communication from among a plurality of frequency bands available to be used for the desired wireless communication, comprising:

passively monitoring the plurality of frequency bands to determine interference information for each of the frequency bands;

combining the interference information of said each of the frequency bands to produce a signal quality indication; and

selecting the plurality of frequency bands for the desired wireless communication in response to the signal quality indication.

13. A wireless communication station, comprising:

an antenna for use in wireless communications;

a band selection controller coupled to said antenna for selecting a frequency band for use in a desired wireless communication from among a plurality of frequency bands available to be used for the desired wireless communication;

said band selection controller operable for passively monitoring at least one of the available frequency bands to determine whether the at least one frequency band is acceptable for the desired wireless communication;

said band selection controller operable for selecting a bandwidth of the at least one of the available frequency bands; and

said band selection controller further operable for selecting the at least one frequency band for the desired wireless communication if the at least one frequency band is determined to be acceptable.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

West	5,574,979	Nov. 12, 1996
Van De Berg	5,907,812	May 25, 1999
Souissi	6,327,300	Dec. 04, 2001

Claims 1, 3, 5, 8-10, 12-16, 18-20, 22, 24-26, 29, 30 and 32 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Van De Berg. Claims 2, 6, 7, 21, 23, 27 and 28 stand rejected under 35 U.S.C. § 103(a) as being obvious over Van De Berg in view of “well known prior art” (Answer 11:11-13). Claims 11 and 31 stand rejected under 35 U.S.C. § 103(a) as being obvious over Van De Berg in view of West. Claim 17 stands rejected under 35 U.S.C. § 103(a) as being obvious over Van De Berg in view of Souissi.

Appellants contend that the Examiner erred in stating that Van De Berg anticipated claims 1, 13 and 22, because Van De Berg does not teach combining the interference information of the frequency bands to produce a signal quality indication, nor selecting a bandwidth of at least one of the available frequency bands. The Examiner contends that Van De Berg may fairly be read to meet each limitation of the claims.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the Briefs and the Answer for their respective details. Only those arguments actually made by Appellants have been considered in this decision. Arguments that Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2004).<sup>3</sup>

### ISSUE

There are two principal issues in the appeal before us.

The first issue is whether the Examiner erred in holding that Van De Berg teaches “combining the interference information of said each of the frequency bands to produce a signal quality indication,” as required by claim 1.

The second issue is whether the Examiner erred in holding that Van De Berg teaches “selecting a bandwidth of the at least one of the available frequency bands,” as required by claim 13, or “selecting a bandwidth of the frequency band,” as required by claim 22.

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<sup>3</sup> Appellants have not presented any substantive arguments directed separately to the patentability of the dependent claims or related claims in each group, except as will be noted in this opinion. In the absence of a separate argument with respect to those claims, they stand or fall with the representative independent claim. *See In re Young*, 927 F.2d 588, 590, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991). *See also* 37 C.F.R. § 41.37(c)(1)(vii).

## FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

### *The Invention*

1. Appellants invented a method (and system) for selecting frequency bands in wireless communication (Specification 7:1-5).
2. A plurality of frequency bands are passively monitored to determine interference information for each of the frequency bands (Specification 7:1-6).
3. Interference information for each narrow band observation is combined to produce a signal quality indication (Specification 8:3-8).
4. When passive observations are completed, a wide frequency band is formed from a selected plurality of frequency bands (Specification 7:13-16).
5. The system includes a band selection controller, which performs the passive monitoring for interference information, and selects a bandwidth of the available frequency bands (Specification 9:19-10:7, 10:12-15).

### *Van De Berg*

6. Van De Berg teaches scanning a plurality of frequency bands to determine whether the bands are interference free (col. 9, ll. 4-11).
7. If a particular carrier frequency position is essentially free of interference, subsequent positions are scanned, in an effort to identify a concatenation of carrier frequency positions without interference (col. 9, ll. 13-21).

8. Once sufficiently wide interference-free bandwidth is identified, wireless communication is established (col. 9, ll. 25-29).

9. During the process of scanning carrier frequency positions, if interference is detected at a position, the system must re-start the process of attempting to identify contiguous interference-free frequencies (col. 9, ll. 12-14 and 30-32).

10. Each carrier frequency position is a narrow band channel (Fig. 2:  $C^1_1$ ,  $C^1_2$ ,  $C^1_3$ , etc.).

#### PRINCIPLES OF LAW

Anticipation is established when a single prior art reference discloses expressly or under the principles of inherency each and every limitation of the claimed invention. *Atlas Powder Co. v. IRECO Inc.*, 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1946 (Fed. Cir. 1999); *In re Paulsen*, 30 F.3d 1475, 1478-79, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994).

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 1184, 26 USPQ2d 1057, 1059 (Fed. Cir. 1993).

#### ANALYSIS

Appellants argue that Van De Berg does not anticipate claim 1, because Van De Berg does not disclose the step of “combining the interference information of said each of the frequency bands to produce a signal quality indication” (Br. 5:3-5). Appellants concede that Van De Berg discloses comparison of individual narrow band frequencies against a threshold value to determine that each narrow band frequency is essentially

free of interference (FF 6), but contend that Van De Berg does not consider interference detected at any other carrier frequency position in the pass / fail decision of step 4 (Fig. 7). Appellants further argue that Van De Berg necessarily does not teach the step of “selecting the plurality of frequency bands for the desired wireless communication in response to the signal quality indication,” since it is alleged that Van De Berg does not teach the signal quality indication claimed.

We are not persuaded by Appellants’ argument. As illustrated in Figure 7, Van De Berg scans a plurality of frequency bands in search of a sufficiently large contiguous set of bands useful for wireless communication (FF 6, 7). Each carrier frequency band is monitored for the presence of interference (Fig. 7, step 3; FF 6). If a particular carrier frequency position is essentially free of interference, the system proceeds to determine if enough successive positions are also essentially free of interference, until a sufficiently wide interference-free bandwidth has been identified (Fig. 7, step 6; FF 7). At that point, wireless communication is established (Fig. 7, step 8; FF 8). If a carrier frequency position having interference is encountered (Fig. 7, step 4), the system of Van De Berg must begin scanning again with the next carrier frequency position, in an attempt to identify sufficient interference-free bandwidth (FF 9). We construe Van De Berg’s process of continuing to scan carrier frequency positions for interference, after one or more interference-free channels have been noted, to meet the claim limitation of “combining the interference information,” because Van De Berg must “combine” the “interference information” consisting of the detection of a contiguous plurality of interference-free bands in order to

arrive at his determination that communication across a particular bandwidth may commence. We construe Van De Berg's decision to establish communication once sufficient interference-free bandwidth has been identified to meet the limitation of "produc[ing] a signal quality indication," because Van De Berg does not proceed with communication until the appropriate number of interference-free channels have been detected. The "indication" of "signal quality" in Van De Berg consists of the use of the interference-free bandwidth. Finally, we read Van De Berg's establishment of communication, after identification of sufficient interference-free bandwidth, as meeting the limitation of "selecting the plurality of frequency bands for the desired wireless communication in response to the signal quality indication." We therefore find that Appellants have not carried their burden of establishing error by the Examiner.

Appellants argue that Van De Berg does not anticipate claims 13 and 22, in that Van De Berg does not disclose bandwidth selection. Claim 13 recites "said band selection controller operable for selecting a bandwidth of the at least one of the available frequency bands." Claim 22 recites "selecting a bandwidth of the frequency band."

Appellants' Specification describes band selector 34, which may select a wide or narrow band channel for observation in response to user input (Specification 9: 19-22). Appellants' claims do not contain limitations requiring the ability to change the width of the channel selected for observation, nor requiring user input. Van De Berg discloses selection of a carrier frequency for scanning (FF 6). Each carrier frequency position is a narrow band channel (FF 10). Appellant refers to Van De Berg's band



width as “predetermined” (Br. 10:8), but Appellants’ claims contain no limitation describing when the width of any particular band is selected. Because Van De Berg teaches selecting carrier frequency bands, one after another, and selecting a bandwidth for each (albeit the same bandwidth), Appellants have not shown that the Examiner’s rejection is in error.

Because Appellants have failed to show that the Examiner erred in holding claims 1, 13 and 22 to be anticipated by Van De Berg, we will sustain the Examiner’s rejection of claims 1, 3, 5, 8-10, 12-16, 18-20, 22, 24-26, 29, 30 and 32 under 35 U.S.C. § 102(b) which have been grouped together by Appellants, as well as the rejection of claims 2, 6, 7, 11, 17, 21, 23, 27, 28 and 31 under 35 U.S.C. § 103(a) which Appellants have not separately argued for patentability.

#### CONCLUSION OF LAW

We conclude that Appellants have not shown that the Examiner erred in rejecting claims 1-3 and 5-32. Claims 1-3 and 5-32 are unpatentable.

#### DECISION

The Examiner’s rejection of claims 1-3 and 5-32 is affirmed.

Appeal 2007-1481  
Application 09/915,091

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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